What is claimed is:

1. A method of removing SO_3 from off gases produced at an industrial plant which combusts sulfur containing fuels, the method comprising the steps of:

providing a sulfur containing fuel as a power source for the plant;

burning the fuel at the plant, thereby producing off gases containing SO_3, and collecting the off gases in an exhaust duct which is heated by the off gases to an exhaust duct temperature;

injecting a calcium hydroxide slurry of controlled and specified physical and chemical characteristics into the off gases in the exhaust duct at a point in the duct where the exhaust duct temperature is sufficient to evaporate water from the calcium hydroxide slurry, the calcium hydroxide reacting with the SO_3 to produce calcium sulfate;

removing the calcium sulfate in a particulate removal system.

2. The method of claim 1, wherein the calcium hydroxide slurry is injected at a point in the duct where the exhaust duct temperature is below about 500-600EC.

3. The method of claim 1, wherein the calcium hydroxide slurry is made by slaking quicklime.

4. The method of claim 1, wherein the solids content of the calcium hydroxide slurry is in the range from about 15-45% by weight.

5. The method of claim 1, wherein the calcium hydroxide slurry is made by adding additional water to lime hydrate.

6. The method of claim 1, where the industrial plant has a wet scrubbing system which utilizes wet slaking of calcium oxide for the removal of oxides of sulfur in off gases and wherein a portion of the wet slaked calcium oxide is diverted from the wet scrubbing system and injected into the exhaust gas duct prior to the particulate removal system.

7. The method of claim 1, wherein a saturated solution of calcium hydroxide is injected into the exhaust duct.

8. The method of claim 1, wherein the calcium hydroxide slurry is introduced into the exhaust duct through at least one nozzle and wherein compressed air is also introduced into the nozzle to produce a plurality of lime slurry droplets, the lime slurry droplets having a particle size in the range from about 30-100 microns.

9. A method of removing SO_3 from off gases produced at a fossil fired power plant having a boiler, an exhaust duct which receives off gases from a combustion chamber of the boiler and a downstream particulate removal station, the method comprising the steps of:

providing a fossil fuel as a power source for the plant;

burning the fossil fuel in the combustion chamber of the boiler at the plant, thereby producing off gases containing SO_3, and collecting the off gases in the exhaust duct which is heated by the off gases to an exhaust duct temperature;

injecting a calcium hydroxide slurry of controlled and specified physical and chemical characteristics into the off gases downstream from the boiler but upstream from the particulate removal station, the calcium hydroxide slurry being injected in the exhaust duct at a point in the duct where the exhaust duct temperature is sufficient to evaporate water from the calcium hydroxide slurry but is low enough to avoid decomposing and converting the calcium hydroxide to calcium oxide, the calcium hydroxide reacting with the SO_3 to produce calcium sulfate;

removing the calcium sulfate at the particulate removal station.

10. The method of claim 9, wherein the exhaust gas duct passes to an electrostatic precipitator and from the electrostatic precipitator to a flue gas desulfurization absorber, and wherein the calcium hydroxide slurry is injected at a point in the exhaust duct between the electrostatic precipitator and the flue gas desulfurization absorber.

11. The method of claim 10, wherein the calcium hydroxide slurry is injected at a point in the duct where the exhaust duct temperature is below about 500-600EC.

12. The method of claim 10, wherein the calcium hydroxide slurry is made by slaking quicklime.

13. The method of claim 10, wherein the solids content of the calcium hydroxide slurry is in the range from about 15-35% by weight.

14. The method of claim 10, wherein the calcium hydroxide slurry is made by slaking quicklime on site at the plant using a portable slaking tank.

15. The method of claim 10, where the power plant has a wet scrubbing system which utilizes wet slaking of calcium oxide for the removal of oxides of sulfur in off gases and wherein a portion of the wet slaked calcium oxide is diverted from the wet scrubbing system and injected into the exhaust gas duct prior to the particulate removal system.

16. The method of claim 10, wherein a saturated solution of calcium hydroxide is injected into the exhaust duct.

17. The method of claim 10, wherein the calcium hydroxide slurry is introduced into the exhaust duct through at least one nozzle and wherein compressed air is also introduced into the nozzle to produce

a plurality of lime slurry droplets, the lime slurry droplets having a particle size in the range from about 40-50 microns.